

Claims

What is claimed is:

1. A composition comprising at least one film-forming hydrophilic colloid and at least one ceramic nanoparticle material.
2. A composition according to claim 1, comprising
 - a. 25 - 99.9 parts by weight film-forming hydrophilic colloid; and
 - b. 0.1 - 75 parts by weight ceramic nanoparticle material.
3. A composition according to claim 1, comprising
 - a. 50 - 95 parts by weight film-forming hydrophilic colloid; and
 - b. 5 - 50 parts by weight ceramic nanoparticle material.
4. A composition according to claim 1, comprising
 - a. 70 - 90 parts by weight film-forming hydrophilic colloid; and
 - b. 10 - 30 parts by weight ceramic nanoparticle material.
5. A composition according to claim 1, additionally comprising water.
6. A composition according to claim 5, comprising 1000 parts by weight water.
7. A composition according to claim 1, wherein the film-forming hydrophilic colloid comprises a gelatin.
8. A composition according to claim 1, wherein the ceramic nanoparticle material comprises one or more metal oxides.
9. A composition according to claim 8, wherein said one or more metal oxides are selected from the group consisting of titania and alumina.

10. A composition according to claim 8, wherein said one or more metal oxides are alumina.
11. A composition according to claim 1, wherein average particle size of the ceramic nanoparticle material ranges from 3 nm to 100 nm.
12. A composition according to claim 1, wherein average particle size of the ceramic nanoparticle material ranges from 5 nm to 50 nm.
13. A composition according to claim 1, wherein average particle size of the ceramic nanoparticle material ranges from 10 nm to 30 nm.
14. A composition according to claim 1, wherein maximum particle size of the ceramic nanoparticle material is 100 nm.
15. An scratch-resistant imaging element comprising
a support, and
a layer comprising at least one film-forming hydrophilic colloid and at least one ceramic nanoparticle material.
16. A scratch-resistant imaging element according to claim 15, wherein the layer is an imaging layer.
17. A scratch-resistant imaging element according to claim 15, wherein the layer is a protective layer, and the scratch-resistant imaging element additionally comprises an imaging layer.
18. A scratch-resistant imaging element according to claim 15, wherein the layer comprises:
 - a. 50 - 95 parts by weight film-forming hydrophilic colloid; and
 - b. 5 - 50 parts by weight ceramic nanoparticle material.

19. An scratch-resistant imaging element according to claim 15, wherein the layer comprises:

- a. 70 - 90 parts by weight film-forming hydrophilic colloid; and
- b. 10 - 30 parts by weight ceramic nanoparticle material.

20. An scratch-resistant imaging element according to claim 15, wherein the film-forming hydrophilic colloid comprises a gelatin.

21. An scratch-resistant imaging element according to claim 15, wherein the ceramic nanoparticle material is alumina.

22. A method for fabricating a scratch-resistant imaging element having optical clarity, the method comprising

- a. dispersing a ceramic nanoparticle material in an aqueous solution of a film-forming hydrophilic colloid to form a coating composition;
- b. applying the coating composition to a surface of a support for an imaging element;
- c. drying the coated surface; and, optionally,
- d. aging the dried coated surface,

whereby an imaging element having both optical clarity and resistance to scratching is produced.